

What is claimed is:

1. An image forming apparatus being tandem type and forming an image by superimposing images formed at image forming sections of respective colors, the image forming apparatus comprising:

a correction memory which stores main scanning directional magnification correction data of respective colors with reference to a reference color;

a reference magnification memory which stores main scanning directional magnification of the reference color;

an image clock generating section which generates an image clock;

a readout unit which reads out main scanning directional magnification correction data of respective colors from the correction memory basing on a reference magnification clock which is equivalent to an image clock modulated basing on main scanning directional magnification of the reference color;

a modulated clock generating section which generates modulation clocks for respective colors by modulating an image clock basing on main scanning directional magnification correction data of respective colors read out by the readout unit; and

an image formation controlling section which generates control signals to the image forming sections in accordance with modulated clocks of respective colors generated by the modulated clock generating section and image data of respective colors,

wherein respective image forming sections conduct image formation in accordance with control signals of respective

colors from the image formation control section.

2. An image forming apparatus according to claim 1 further comprising:

a positional shift detecting unit which detects positional shift quantity in main scanning direction of respective colors with reference to the reference color; and

magnification correction data generating unit which generates magnification correction data of respective colors basing on positional shift quantity detected by the positional shift detecting unit,

wherein the correction memory stores magnification correction data generated by the magnification correction data generating unit.

3. An image forming apparatus according to claim 1, wherein:

one of the image forming sections forms an image of a reference color;

the image formation controlling section generates a control signal of the reference color basing on a reference magnification clock and image data of the reference color;

magnification correction data of respective colors other than the reference color stored in the correction memory are partial magnification correction data for correcting magnification variations that depends on position in a main scanning direction; and

modulated clocks of respective colors other than the reference color generated at the modulated clock generating

section are partially-modulated clocks clock speed of which varies depending on a position in a main scanning direction.

4. An image forming apparatus according to claim 3, wherein:  
magnification correction data of respective colors other than the reference color stored in the correction memory are to designate magnification at each position in a main scanning direction; and

the modulated clock generating section changes clock speed by an increment of predetermined number of reference magnification clocks.

5. An image forming apparatus according to claim 1 further comprising a synchronizer unit which synchronizes generation of control signals of respective colors at the image formation controlling section.

6. An image forming apparatus according to claim 4, wherein regions at the correction memory in main scanning direction are set such that the entirety of main scanning direction is divided uniformly.

7. An image forming apparatus according to claim 1, wherein pulse width corresponding to one pixel with respect to control signals for image formation differ by region in main scanning direction.

8. An image forming apparatus being tandem type and forming

an image by superimposing images formed at image forming sections of respective colors, the image forming apparatus comprising:

- a correction memory which stores main scanning directional magnification correction data of respective colors with reference to an imaginary color;

- a reference magnification memory which stores main scanning directional magnification;

- an image clock generating section which generates an image clock;

- a readout unit which reads out main scanning directional magnification correction data of respective colors from the correction memory basing on a reference magnification clock which is equivalent to an image clock modulated basing on main scanning directional magnification;

- a modulated clock generating section which generates modulation clocks for respective colors by modulating an image clock basing on main scanning directional magnification correction data of respective colors read out by the readout unit; and

- an image formation controlling section which generates control signals to the image forming sections in accordance with modulated clocks of respective colors generated by the modulated clock generating section and image data of respective colors,

wherein respective image forming sections conduct image formation in accordance with control signals of respective colors from the image formation control section.

9. Image forming method for forming an image by superimposing images formed at image forming sections of respective colors, the image forming method comprising steps of:

obtaining main scanning directional magnification of a reference color;

obtaining main scanning directional magnification correction data of respective colors with reference to the reference color;

reading out main scanning directional magnification correction data of respective colors other than the reference color basing on a reference magnification clock which is equivalent to an image clock modulated by main scanning directional magnification of the reference color;

generating modulated clocks of respective colors by modulating an image clock basing on main scanning directional magnification correction data of respective colors read out;

generating control signals of respective colors in accordance with modulated clocks of respective colors and image data of respective colors; and

forming images of respective colors in accordance with the control signals of respective colors.

10. Image forming method according to claim 9 further comprising a step of detecting positional shift quantities in main scanning direction of respective colors with reference to the reference color, wherein main scanning directional magnification correction data of respective colors are obtained basing on detected positional shift quantities.

11. Image forming method according to claim 9, wherein, for obtaining main scanning directional magnification correction data, main scanning direction is divided into a plurality of regions for colors other than the reference color and magnification correction data are obtained by each region.

12. Image forming method according to claim 11, wherein generation of modulated clocks for colors other than the reference color is conducted by each region of main scanning direction.

13. Image forming method according to claim 11, wherein entirety of main scanning direction is divided into a plurality of regions uniformly.

14. Image forming method according to claim 9 further comprising a step to generate a plurality of registered marks in main scanning direction, wherein main scanning directional magnification of the reference color and main scanning directional positional shift quantities of respective colors other than the reference color with reference to the reference color are detected by detecting generated registered marks.

15. An image forming apparatus being tandem type and forming an image by superimposing images formed at image forming sections of respective colors, the image forming apparatus comprising:

a memory which stores image data of respective colors for image formation by each main scanning directional line;

an image processing section which conducts image processing in accordance with an input-side clock upon receipt of inputs of image data of respective colors and writing image data after through the image processing in the memory in accordance with an input-side clock;

an input-side clock supplying section which supplies an input-side clock to the image processing section and the memory;

an image clock generator which generates an image clock;

a modulated clock generator which generates modulated clocks of respective colors by modulating image clocks in accordance with main scanning directional magnification correction data of respective colors; and

an image formation control section which generates control signals to respective image forming sections by reading out image data of respective colors from the memory in accordance with modulated clocks of respective colors generated at the modulated clock generating sections,

wherein respective image forming sections form images of respective colors in accordance with control signals of respective colors from the image formation control section.